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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/815,264 | 03/31/2004 | Narayanan Sundararajan | 070702009000 | 7476 |

7590 04/19/2007
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| EXAMINER |
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BAUSCH, SARAE L

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| ART UNIT | PAPER NUMBER |
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1634

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
|--|------------|---------------|
| 3 MONTHS | 04/19/2007 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/815,264

Applicant(s)

SUNDARARAJAN ET AL.

Examiner

Sarae Bausch

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 1-9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 11/04.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application
- ☐ Other: _____.

DETAILED ACTION

1. This action is in response to applicants correspondence mailed 01/03/2007. The amendment to the specification mailed 01/03/2007 has been entered

Election/Restrictions

2. Applicant's election without traverse of group II, claims 10-20 drawn to an apparatus in the reply filed on 09/01/2006 is acknowledged.
3. Claims 1-9 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 09/01/2006.

Drawings

4. The drawings are acceptable.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

6. Claims 10-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Chan et al. (US Patent 6696022).

With regard to claim 10, Chan et al. teach an apparatus that comprises a first tapered channel comprising a first end, a second end, a plurality of posts between the two ends in a staggered arrangement. Chan et al. teach a first tapered channel decreasing width between .5 and 5 μm with posts having a gap of .5 μm and a second tapered channel with a width between .5 and 5 μm (see column 10, lines 13-21). Therefore, Chan et al. teach a first channel with a restriction barrier comprising a first angled wall at least 1 μm opening (first tapered channel with posts) and second opening less than 10 microns in diameter (second tapered channel).

With regard to claim 11, Chan et al. teach the second tapered channel opening is .5 to 5 μm (see column 10, lines 25-32).

With regard to claim 12, Chan et al. teach a laser light source and an optical detector (see column 34, lines 17-20). It is noted that the claim is drawn to a light source and detector that is capable of detecting a surface enhanced Raman spectroscopy emission of a molecule irradiated by the light source and the laser light source and optical detector taught by Chan et al. teach a light source and detector that is capable of detecting a surface enhanced Raman spectroscopy

emission. Furthermore, Chan et al. teach Raman scattering is minimized by small probe volume, therefore Raman signal is capable of being detection (see column 33, lines 10-11). Chan et al. teach a first channel in optical communication with the light source and detection (see figure 24 and 25)

With regard to claim 13, Chan et al. teach an apparatus that comprises a laser light source, a detector to detect a surface enhanced Raman spectroscopy emission of a molecule irradiated by the light source, and a first channel in optical communication with the light source and detector (see figure 24) (see column 33, lines 5-32). Chan et al. teach the first channel comprises a restriction barrier comprising a plurality of walls to restrain movement of a single particle upstream of light emitted by the light source (see figure 20 and column 10, lines 13-21). It is noted that claims 13-20 are drawn to a “system”. The specification teaches at least two inventions in the form of a “system” and “method” wherein the system is defined in terms of **structural** limitations (see paragraphs 15 and 20,) Claims 13-20 recite **structural** limitations of the “system”. The “system” is therefore interpreted as an **apparatus** rather than a method.

With regard to claim 14, Chan et al. teach a first angled wall and a second angled wall (first tapered channel) to form a first opening of .5 to 5 μm and second opening (second tapered channel) to form a second opening of .5 to 5 μm . Chan et al. teach posts located in the first channel with a width between the posts of .5 μm (second opening of less than 10 μm and a first opening with a width of 50 μm (see figure 20). The first opening has a greater width than the second opening (see posts in figure 20).

7. Claims 10-20 rejected under 35 U.S.C. 102(e) as being anticipated by Chan et al. (US 2003/0187237 A1)

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The applied reference has a common inventors with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

With regard to claim 10-11, Chan et al. teach an apparatus comprising a first channel comprising a restriction barrier (comb surface and nanoparticles) with a first angled wall and a second angled wall to form a first opening and a second opening that is about 1 μm (micro channels at least 1 micron and less than 10 micron) (see paragraph 10, 15, and figure 1).

With regard to claim 12, Chan et al. teach an apparatus with a light source and detector for surface enhanced Raman spectroscopy emission (see figure 1 and paragraph 69).

With regard to claim 13, Chan et al. teach a system the comprises a light source, detector, and a first channel in optical communication with the light source and detector (see figure 1, paragraph 10, 15, 69, 71) . Chan et al. teach a first channel that comprises a restriction barrier that comprises a plurality of walls to restrain movement (nanoparticles, see paragraph 15). The specification teaches at least two inventions in the form of a "system" and "method" wherein the system is defined in terms of **structural** limitations (see paragraphs 15 and 20,) Claims 13-20 recite **structural** limitations of the "system". The "system" is therefore interpreted as an **apparatus** rather than a method.

With regard to claim 14, Chan et al. teach the restriction barrier, nanoparticles, comprise a first angled wall and second angled wall wherein the first opening is at least 1 micron and a second opening of less than 10 microchannel (see figure 1 and paragraph 16, 23, 34).

With regard to claim 15, Chan et al. teach a laser light source and lenses for a gradient force optical trap (see para 71-72).

With regard to claim 16, Chan et al. teach a second channel forming a junction with a first channel (see figure 1).

With regard to claim 17, Chan et al. teach nanoparticles (restriction barriers) located upstream of the junction (see figure 1).

With regard to claim 18-19, Chan et al. teach the light source and optical trap is positioned downstream of the first and second channel junction (see figure 1).

With regard to claim 20, Chan et al. teach a portion of the flow path is coated with gold (nanoparticles coated with gold) (see figure 1 and paragraph 27)

Conclusion

8. No claims are allowable.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sarae Bausch whose telephone number is (571) 272-2912. The examiner can normally be reached on M-F 9am-5pm.

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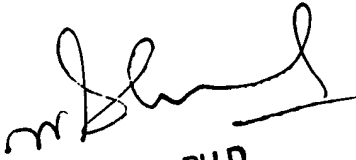
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ram Shukla can be reached on (571) 272-0735. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

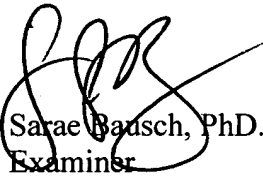
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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

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SUPERVISORY PATENT EXAMINER


Sarae Bausch, PhD.
Examiner
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